GEMÜ R629 eSyLite

Motorized diaphragm valve

EN **Operating instructions**

further information
webcode: GW-R629

Contents

1 General information

1.1 Information

- The descriptions and instructions apply to the standard versions. For special versions not described in this document the basic information contained herein applies in combination with any additional special documentation.
- Correct installation, operation, maintenance and repair work ensure faultless operation of the product.
- Should there be any doubts or misunderstandings, the German version is the authoritative document.
- Contact us at the address on the last page for staff training information.

1.2 Symbols used

The following symbols are used in this document:

Symbol	Meaning
●	Tasks to be performed
▶	Response(s) to tasks
–	Lists

1.3 Definition of terms

Working medium

The medium that flows through the GEMÜ product.

Diaphragm size

Uniform seat size of GEMÜ diaphragm valves for different nominal sizes.

1.4 Warning notes

Wherever possible, warning notes are organised according to the following scheme:

SIGNAL WORD	
Possible symbol for the specific danger	Type and source of the danger ▶ Possible consequences of non-observance. ● Measures for avoiding danger.

Warning notes are always marked with a signal word and sometimes also with a symbol for the specific danger.

The following signal words and danger levels are used:

⚠ DANGER

Imminent danger!

▶ Non-observance can cause death or severe injury.

⚠ WARNING

Potentially dangerous situation!

▶ Non-observance can cause death or severe injury.

⚠ CAUTION

Potentially dangerous situation!

▶ Non-observance can cause moderate to light injury.

NOTICE

Potentially dangerous situation!

▶ Non-observance can cause damage to property.

The following symbols for the specific dangers can be used within a warning note:

Symbol	Meaning
	Danger of explosion!
	Corrosive chemicals!
	Hot plant components!
	Damage to the product!

2 Safety information

The safety information in this document refers only to an individual product. Potentially dangerous conditions can arise in combination with other plant components, which need to be considered on the basis of a risk analysis. The operator is responsible for the production of the risk analysis and for compliance with the resulting precautionary measures and regional safety regulations.

The document contains fundamental safety information that must be observed during commissioning, operation and maintenance. Non-compliance with these instructions may cause:

- Personal hazard due to electrical, mechanical and chemical effects.
- Hazard to nearby equipment.
- Failure of important functions.
- Hazard to the environment due to the leakage of dangerous substances.

The safety information does not take into account:

- Unexpected incidents and events, which may occur during installation, operation and maintenance.
- Local safety regulations which must be adhered to by the operator and by any additional installation personnel.

Prior to commissioning:

1. Transport and store the product correctly.
2. Do not paint the bolts and plastic parts of the product.
3. Carry out installation and commissioning using trained personnel.
4. Provide adequate training for installation and operating personnel.
5. Ensure that the contents of the document have been fully understood by the responsible personnel.
6. Define the areas of responsibility.
7. Observe the safety data sheets.
8. Observe the safety regulations for the media used.

During operation:

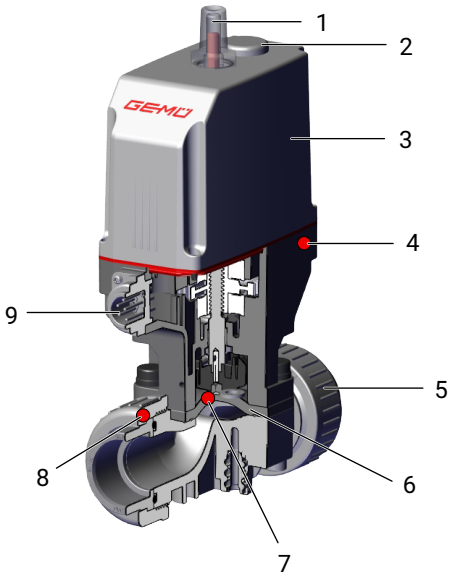
9. Keep this document available at the place of use.
10. Observe the safety information.
11. Operate the product in accordance with this document.
12. Operate the product in accordance with the specifications.
13. Maintain the product correctly.
14. Do not carry out any maintenance work and repairs not described in this document without consulting the manufacturer first.

In cases of uncertainty:

15. Consult the nearest GEMÜ sales office.

3 Product description

3.1 Construction



Item	Name	Materials
1	Optical position indicator	PA 12
2	Manual override	
3	Motorized actuator	Reinforced polyamide
4	CONEXO actuator RFID chip (see Conexo information)	
5	Valve body	Inliner PP-H, grey / outliner PP, reinforced Inliner PVDF / outliner PP, reinforced PVC-U, grey ABS PP PP, reinforced PP-H, natural | PVDF
6	Diaphragm	EPDM, FKM, NBR, PTFE / EPDM
7	CONEXO diaphragm RFID chip (see Conexo information)	
8	CONEXO body RFID chip (see Conexo information)	
9	Electrical connection	

3.2 Description

The GEMÜ R629 eSyLite 2/2-way diaphragm valve is motorized. It is available in an Open/Closed version. An integrated optical position indicator is standard. The self-locking actuator holds its position in a stable manner in the event of power supply failure.

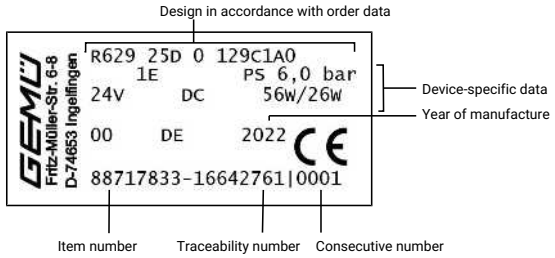
3.3 Function

The product controls a flowing medium by being closed or opened by a motorised actuator. The product is designed as an OPEN/CLOSED valve and is not intended for control applications.

The product has an optical position indicator as standard. The optical position indicator indicates the OPEN and CLOSED positions.

3.4 Product label

The product label is located on the actuator. Product label data (example):



The month of manufacture is encoded in the traceability number and can be obtained from GEMÜ. The product was manufactured in Germany.

The operating pressure stated on the product label applies to a media temperature of 20 °C. The product can be used up to the maximum stated media temperature. You can find the pressure/temperature correlation in the technical data.

4 Correct use

⚠ DANGER

Danger of explosion!

- ► Risk of death or severe injury
- ● Do **not** use the product in potentially explosive zones.

⚠ WARNING

Improper use of the product!

- ► Risk of severe injury or death
- ► Manufacturer liability and guarantee will be void.
- ● Only use the product in accordance with the operating conditions specified in the contract documentation and in this document.

The product is designed for installation in piping systems and for controlling a working medium.

The product is not intended for use in potentially explosive areas.

1. Use the product in accordance with the technical data.
2. The product is designed as an OPEN/CLOSED valve and is not intended for control applications. Due to the minimum actuation time, sufficiently accurate control is not possible.

5 Order data

Order codes

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

1 Type	Code
Diaphragm valve, electrically operated, plastic diaphragm valve	R629

2 DN	Code
DN 12	12
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65

3 Body configuration	Code
2/2-way body	D

4 Connection type	Code
Spigot	
Spigot DIN	0
Spigot for IR butt welding	20
Spigot for IR butt welding, BCF	28
Spigot – inch, for welding or solvent cementing, depending on the body material	30
Body with threaded spigots for unions	7X
Union end	
Union end with insert (socket) – DIN	7
Union end with insert (Rp threaded socket) – DIN	7R
Union end with inch insert – BS (socket)	33
Union end with inch insert – ASTM (socket)	3M
Union end with insert – JIS (socket)	3T
Union end with insert (for IR butt welding) – DIN	78
Threaded socket	
Threaded socket DIN ISO 228	1
Solvent cement socket	
Solvent cement socket DIN	2
Flange	
Flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1	4
Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D	39
Flare	
Flare connection with PVDF union nut	75

5 Valve body material	Code
PVC-U, grey	1

5 Valve body material	Code
ABS	4
PP, reinforced	5
PVDF	20
Inliner PP-H, grey, outliner PP, reinforced	71
Inliner PVDF/outliner PP, reinforced	75
PP-H, natural	N5

6 Diaphragm material	Code
Elastomer	
NBR	2
FKM	4
EPDM	29
PTFE	
PTFE/EPDM one-piece	54
PTFE/EPDM two-piece	5M
Note: The PTFE/EPDM diaphragm (code 5M) is available from diaphragm size 25.	

7 Voltage/Frequency	Code
24 V DC	C1

8 Control module	Code
ON/OFF actuator (economy)	A0
ON/OFF actuator (economy) Emergency power supply module (NC)	A1
ON/OFF actuator (economy) Emergency power supply module (NO)	A2
OPEN/CLOSE control with mounted GEMÜ 1235 position indicator	Y0
OPEN/CLOSE control with mounted GEMÜ 1235 position indicator Emergency power supply module (NC)	Y1
OPEN/CLOSE control with mounted GEMÜ 1235 position indicator Emergency power supply module (NO)	Y2
OPEN/CLOSE control with mounted GEMÜ 1215 position indicator	Z0
OPEN/CLOSE control with mounted GEMÜ 1215 position indicator Emergency power supply module (NC)	Z1
OPEN/CLOSE control with mounted GEMÜ 1215 position indicator Emergency power supply module (NO)	Z2

9 Actuator version	Code
Actuator size 1 diaphragm size 10	1C
Actuator size 1 diaphragm size 20	1E

9 Actuator version	Code
Actuator size 1 diaphragm size 25	1F
Actuator size 3 diaphragm size 40	3H
Actuator size 3 diaphragm size 50 with distance piece	K3

10 Mounting plate	Code
Including mounting plate	M
Without mounting plate	O
Standard	

Order example

Ordering option	Code	Description
1 Type	R629	Diaphragm valve, electrically operated, plastic diaphragm valve
2 DN	25	DN 25
3 Body configuration	D	2/2-way body
4 Connection type	7	Union end with insert (socket) – DIN
5 Valve body material	1	PVC-U, grey
6 Diaphragm material	29	EPDM
7 Voltage/Frequency	C1	24 V DC
8 Control module	A0	ON/OFF actuator (economy)
9 Actuator version	1E	Actuator size 1 diaphragm size 20
10 Mounting plate		Standard

6 Technical data

6.1 Medium

Working medium:

Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and diaphragm material.

The valve will seal in both flow directions up to full operating pressure (gauge pressure).

6.2 Temperature

Media temperature:

Valve body material	Media temperature
PVC-U, grey (code 1)	10 — 60 °C
ABS (code 4)	-10 — 60 °C
PP, reinforced (code 5)	5 – 80 °C
PVDF (code 20)	-10 — 80 °C
Inliner PP-H grey / outliner PP, reinforced (code 71)	5 – 80 °C
Inliner PVDF / outliner PP, reinforced (code 75)	-10 — 80 °C
PP-H, natural (code N5)	5 – 80 °C

Ambient temperature:

Valve body material	Ambient temperature
PVC-U, grey (code 1)	10 — 50 °C
ABS (code 4)	-10 — 50 °C
PP, reinforced (code 5)	5 — 50 °C
PVDF (code 20)	-10 — 50 °C
Inliner PP-H grey / outliner PP, reinforced (code 71)	5 — 50 °C
Inliner PVDF / outliner PP, reinforced (code 75)	-5 — 50 °C
PP-H, natural (code N5)	5 — 50 °C

If the emergency power module is used (control module code A1, A2, Z1, Z2), the maximum ambient temperature is reduced to 40 °C.

Storage temperature:

0 — 40 °C

6.3 Pressure

Operating pressure:

0 — 6 bar

All pressures are gauge pressures. Operating pressure values were determined with static operating pressure applied on one side of a closed valve. Sealing at the valve seat and atmospheric sealing is ensured for the given values.

Information on operating pressures applied on both sides and for high purity media on request.

The operating pressures apply at room temperature. In case of deviating temperatures, observe the pressure / temperature correlation.

Pressure rating:

PN 10

Pressure/temperature correlation:

Valve body material		Temperatures in °C (valve body)										
Materials	Code	-10	0	5	10	20	30	40	50	60	70	80
PVC-U	**1**	-	-	-	6.0	6.0	6.0	6.0	3.5	1.5	-	-
ABS	**4**	6.0	6.0	6.0	6.0	6.0	6.0	6.0	4.0	2.0	-	-
PP-H	**5**	-	-	6.0	6.0	6.0	6.0	6.0	5.5	4.0	2.7	1.5
PP-H	**71**	-	-	6.0	6.0	6.0	6.0	6.0	5.5	4.0	2.7	1.5
PVDF	**20**	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.4	4.7
PVDF	**75**	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.4	4.7
PP-H, natural	**N5**	-	-	6.0	6.0	6.0	6.0	6.0	5.5	4.0	2.7	1.5

The pressure rating (PN) depends on the diaphragm size.
Data for extended temperature ranges on request. Please note that the ambient temperature and media temperature generate a combined temperature at the valve body which must not exceed the above values.

Leakage rate:

Leakage rate A to P11/P12 EN 12266-1

Kv values:

MG	DN	Kv values
10	**12**	2.8
	15	3.5
	20	3.5
20	**15**	6.0
	20	10.0
	25	12.0
25	**32**	20.0
40	**40**	42.0
	50	46.0
50	**65**	70.0

MG = diaphragm size, Kv values in m^3/h
Kv values determined acc.to DIN EN 60534 standard, inlet pressure 5 bar, Δp 1 bar, PVC-U valve body and soft elastomer diaphragm. The Kv values for other product configurations (e.g. other diaphragm or body materials) may differ. In general, all diaphragms are subject to the influences of pressure, temperature, the process and their tightening torques. Therefore the Kv values may exceed the tolerance limits of the standard.
The Kv value curve (Kv value dependent on valve stroke) can vary depending on the diaphragm material and duration of use.

6.4 Product compliance

Machinery Directive: 2006/42/EC

Pressure Equipment Directive: 2014/68/EU

Food: FDA*
* depending on version and/or operating parameters

EMC Directive: 2014/30/EU

RoHS Directive: 2011/65/EU

6.5 Materials

Materials:

Diaphragm material	O-ring material
PTFE	FPM
NBR	EPDM
FPM	FPM
EPDM	EPDM

6.6 Mechanical data

Protection class: IP 65 acc. to EN 60529

Actuating speed: Max. 3 mm/s

Flow direction: Optional

Installation position: Optional
Observe the angle of rotation to achieve an installation for optimized draining

Weight:

Actuator

MG 10: 0.8 kg
MG 20: 0.88 kg
MG 25: 0.94 kg
MG 40: 1.4 kg
MG 50: 2.8 kg

Valve body

MG	DN	Spigot			Union end				Flange	Threaded socket	Solvent cement socket	Flare
		Connection type code										
		0, 30	20	28	7, 7R	33	3M, 3T	78	4, 39	1	2	75
10	12	-	-	-	-	-	-	-	-	0.08	0.06	-
	15	-	-	0.13	0.18	0.13	-	0.20	-	-	-	0.08
	20	-	-	-	-	-	-	-	-	-	-	0.125
20	15	0.12	0.10	-	0.17	0.24	0.26	0.27	0.67	-	-	-
	20	0.13	0.12	-	0.21	0.28	0.30	0.36	0.84	-	-	-
20	25	0.16	0.14	-	0.26	0.33	0.38	0.37	1.28	-	-	-
25	32	0.22	0.18	-	0.40	0.70	0.73	0.63	1.89	-	-	-
40	40	0.50	0.40	-	0.73	0.83	0.93	1.13	2.36	-	-	-
	50	0.57	0.47	-	1.00	1.40	1.50	1.60	3.08	-	-	-
50	65	0.92	3.57	-	-	-	-	-	3.20	-	-	-

MG = diaphragm size
Weights in kg

Mechanical environmental conditions: Class 4M8 acc. to EN 60721-3-4:1998

Vibration: 5g acc. to IEC 60068-2-6 Test Fc

Shock: 25g acc. to 60068-2-27 Test Ea

6.7 Actuator duty cycle and service life

Service life: Class A acc. to EN 15714-2
Minimum 100,000 switching cycles at room temperature and permissible duty cycle.

Duty cycle: max. 30% duty

6.8 Electrical data

Supply voltage: 24 V DC
Tolerance ± 10 %

Operating time:
MG 10: 2.5 s
MG 20: 3.5 s
MG 25: 4.0 s
MG 40: 4.5 s
MG 50: 7.0 s

Close tight current / rated current:
MG 10: 0.5 A
MG 20: 1.4 A
MG 25: 1.3 A
MG 40: 2.3 A
MG 50: 2.3 A

Starting current / maximum current:
MG 10: approx. 2.4 A
MG 20: approx. 2.4 A
MG 25: approx. 2.4 A
MG 40: approx. 4.5 A
MG 50: approx. 4.5 A

Standby current consumption: approx. 10 mA

6.8.1 Digital input signals

Input voltage: max. 30 V DC
≥ 56 kΩ

High level: ≥ 18 V DC

Low level: ≤ 5 V DC

Minimum actuation duration: 600 ms

Input current: < 0.6 mA

6.8.2 Emergency power supply module

Charging current:
MG 10, MG 20, MG 25: max. 0.16 A
MG 40: 0.32 A
MG 50: not available

Charging time: approx. 13 min

Service life: Guide value at 25 °C ambient temperature, approx. 3 years

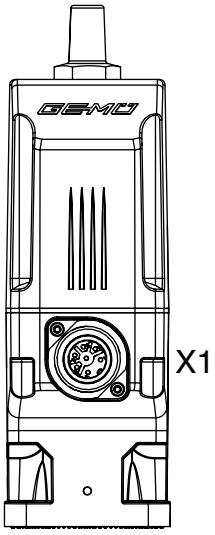
7 Electrical connection

NOTICE

Appropriate cable socket/appropriate mating connector

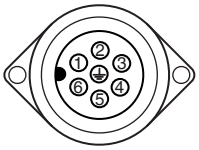
► The appropriate connector is included for X1.

7.1 Position of the connectors



7.2 Electrical connection

Connection X1



7-pin plug, Binder, type 693

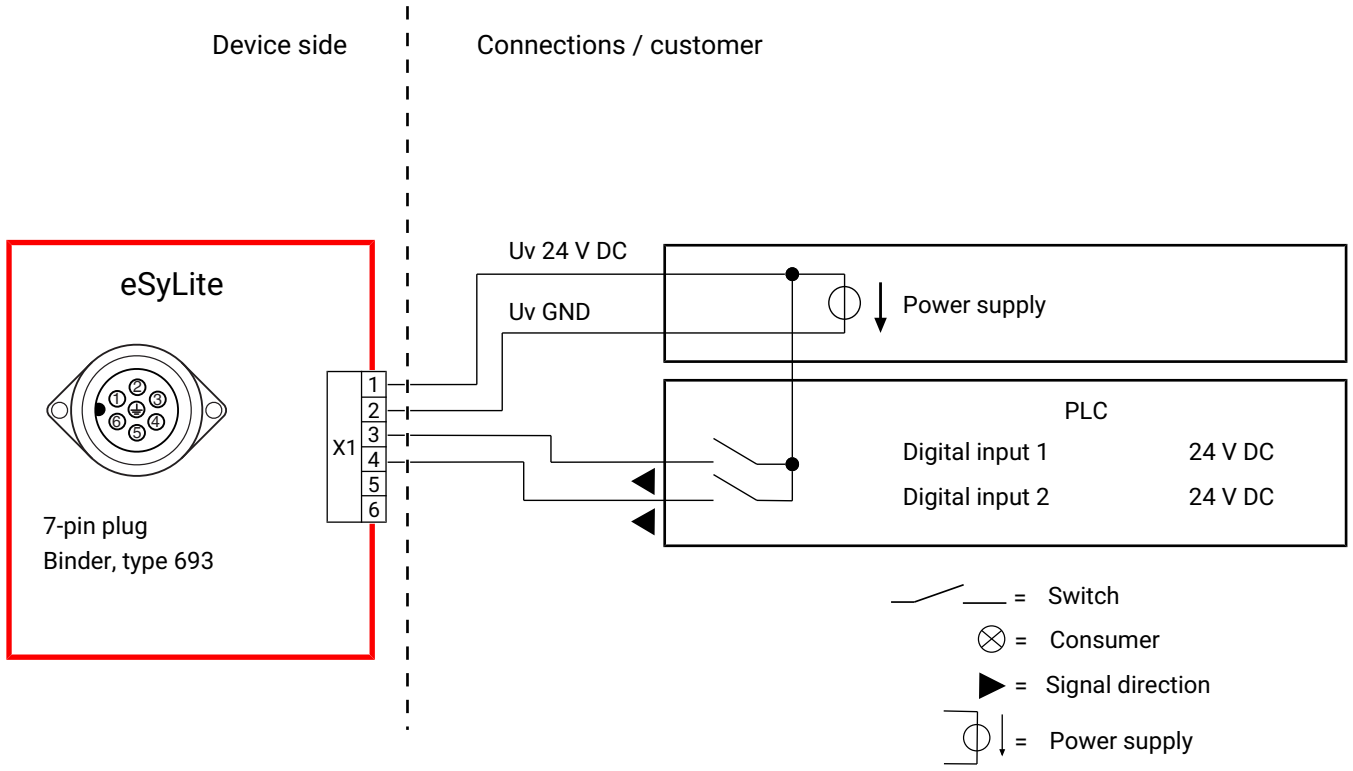
Pin	Signal name
1	24 V supply voltage
2	GND
3	Digital input OPEN
4	Digital input CLOSED
5	n.c.
6	n.c.
7	n.c.

Preferred direction if both digital inputs are present for device version 00 (see operating instructions – Product label)	
Control module ordering option	Preferred direction
A0, Y0, Z0	OPEN
A1, Y1, Z1	CLOSED

Preferred direction if both digital inputs are present for device version 00 (see operating instructions – Product label)	
A2, Y1, Z2	OPEN

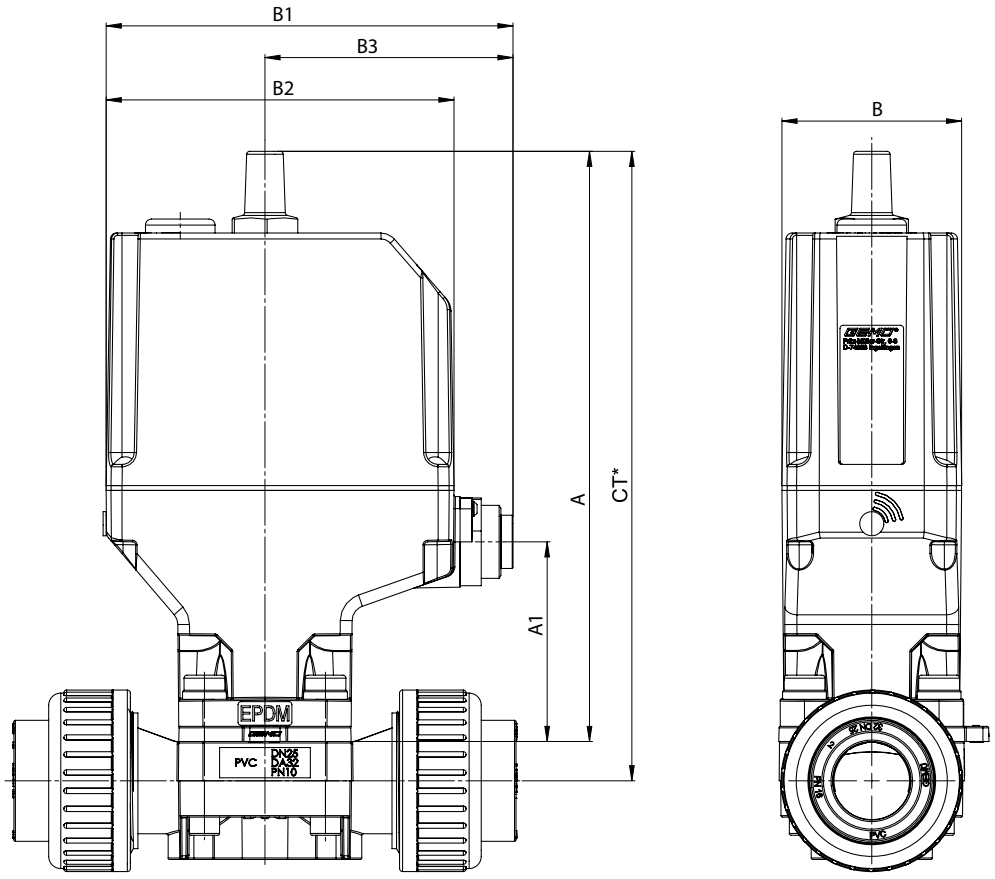
Preferred direction if both digital inputs are present for device version 01 (see operating instructions – Product label)	
Control module ordering option	Preferred direction
A0, Y0, Z0	OPEN
A1, Y1, Z1	OPEN
A2, Y2, Z2	CLOSED

7.3 Connection diagram



8 Dimensions

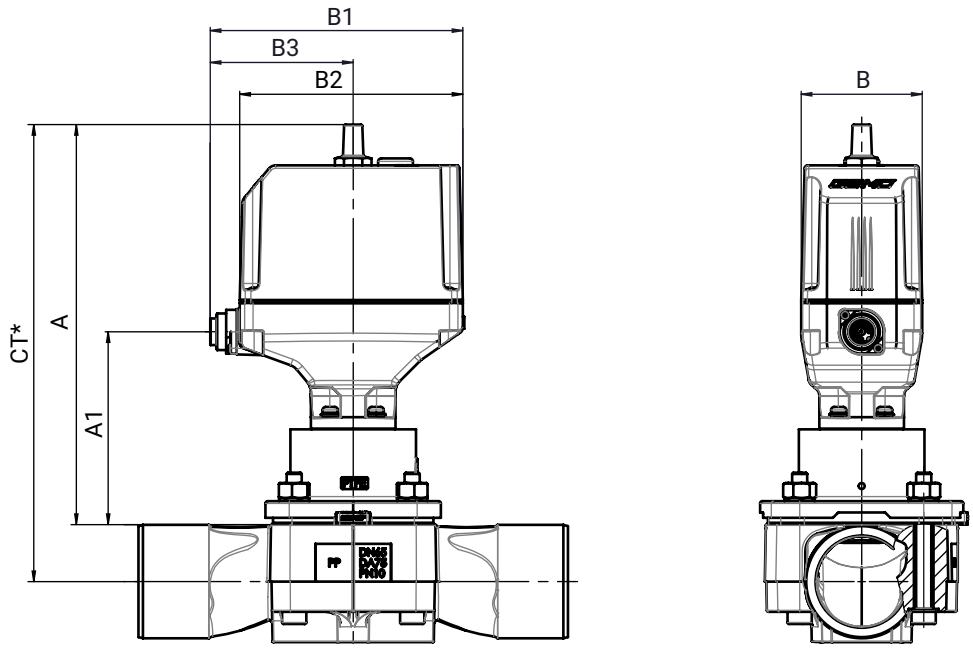
8.1 Actuator dimensions



MG	DN	A	A1	B	B1	B2	B3
10	**12 - 20**	192.0	63.0	59.5	134.5	115.0	82.0
20	**15 - 25**	195.0	66.0	59.5	134.5	115.0	82.0
25	**32**	204.0	75.0	59.5	134.5	115.0	82.0
40	**40, 50**	228.0	91.0	80.0	167.0	147.5	94.5

Dimensions in mm
MG = diaphragm size
* CT = A + H1 (see body dimensions)

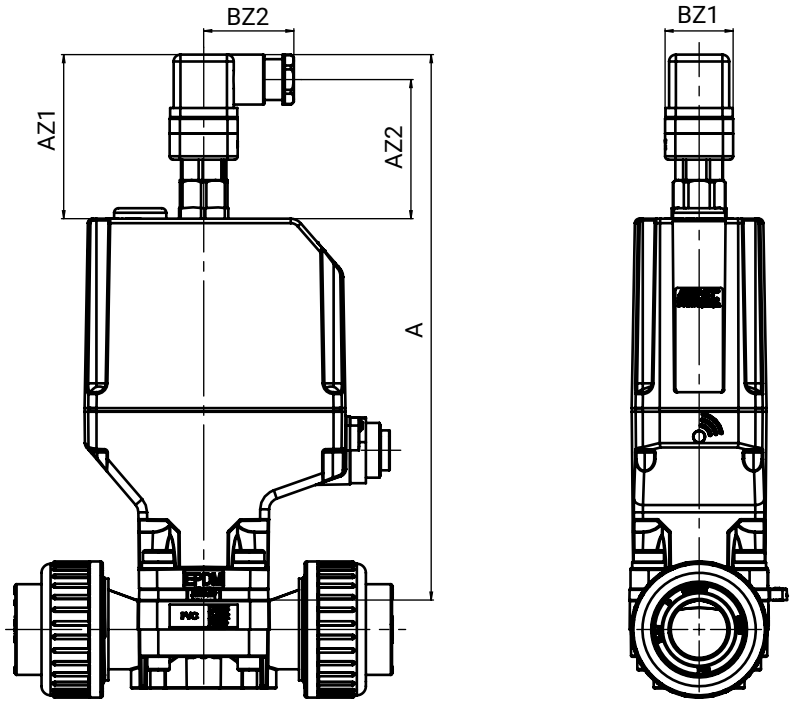
8.2 Actuator dimensions with distance piece



MG	A	A1	B	B1	B2	B3
50	265.0	129.0	80.0	167.0	147.5	94.5

Dimensions in mm
MG = diaphragm size
* CT = A + H1 (see body dimensions)
MG 50 with metal distance piece

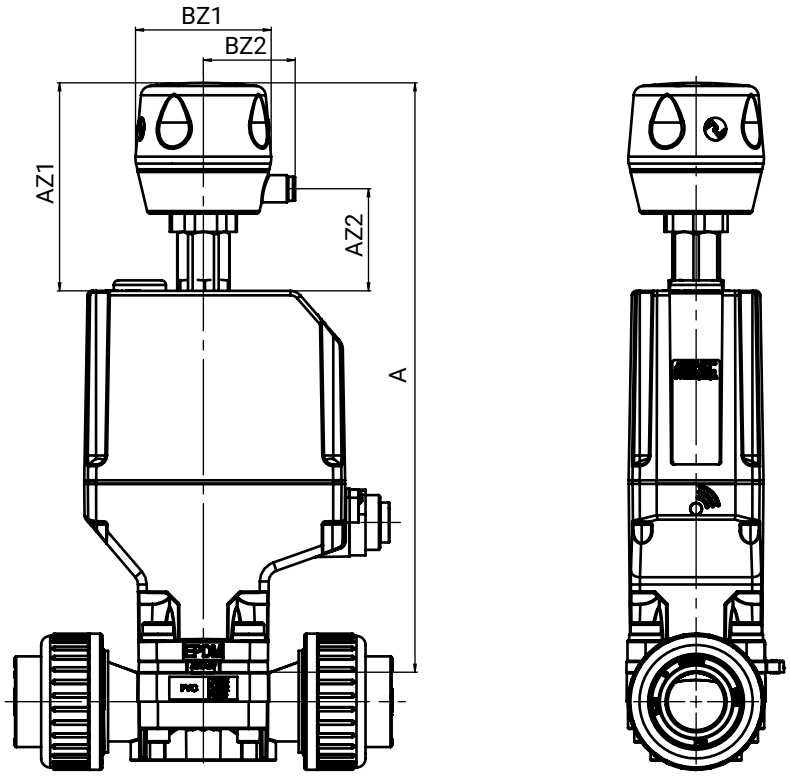
8.3 Actuator dimensions with GEMÜ 1215 position indicator



MG	A	AZ1	AZ2	BZ1	BZ2
10	237.0	72.0	61.0	30.0	40.0
20	240.0	72.0	61.0	30.0	40.0
25	249.0	72.0	61.0	30.0	40.0
40	273.0	72.0	61.0	30.0	40.0
50	310.0	72.0	61.0	30.0	40.0

Dimensions in mm
MG = diaphragm size
MG 50 with metal distance piece

8.4 Actuator dimensions with GEMÜ 1235 position indicator

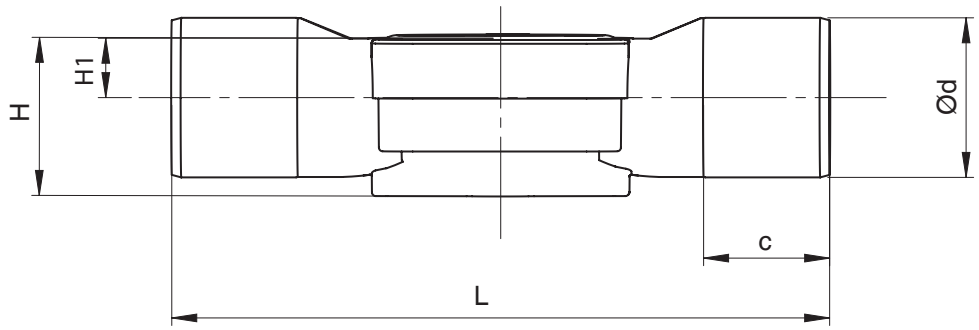


MG	A	AZ1	AZ1	øBZ1	BZ2
10	257.0	92.0	45.0	60.0	40.5
20	260.0	92.0	45.0	60.0	40.5
25	269.0	92.0	45.0	60.0	40.5
40	293.0	92.0	45.0	60.0	40.5
50	330.0	92.0	45.0	60.0	40.5

Dimensions in mm
MG = diaphragm size
MG 50 with metal distance piece

8.5 Body dimensions

8.5.1 Spigot DIN/inch (code 0, 30)



Connection type spigot DIN (code 0) [1], body material PVC-U (code 1), PP (code 5), PVDF (code 20), inliner/outliner (code 71, 75) [2]

MG	DN	NPS	c			ød	H			H1	L
			Material				Material				
			1	5, 20	71, 75		1	5, 20	71, 75		
20	**15**	**1/2"**	16.0	-	18.0	20.0	36.0	-	36.0	10.0	124.0
	20	**3/4"**	19.0	-	19.0	25.0	38.0	-	38.0	12.0	144.0
	25	**1"**	22.0	-	22.0	32.0	39.0	-	39.0	13.0	154.0
25	**32**	**1¼"**	32.0	-	32.0	40.0	41.0	-	41.0	15.0	174.0
40	**40**	**1½"**	35.0	-	26.0	50.0	63.2	-	63.2	23.2	194.0
	50	**2"**	38.0	-	33.0	63.0	63.2	-	63.2	23.2	224.0
50	**65**	**2½"**	46.0	46.0	-	75.0	78.8	78.8	-	38.8	284.0

Connection type spigot - inch (code 30) [1], body material PVC-U (code 1), ABS (code 4) [2]

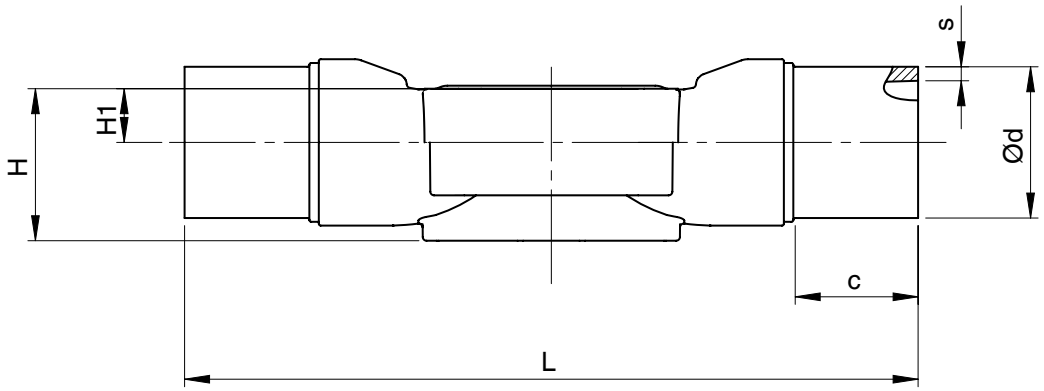
MG	DN	NPS	c	ød	H	H1	L
20	**15**	**1/2"**	24.0	21.4	36.0	10.0	141.0
	20	**3/4"**	27.0	26.7	38.0	12.0	144.0
	25	**1"**	30.0	33.6	39.0	13.0	154.0
25	**32**	**1¼"**	33.0	42.2	41.0	15.0	174.0
40	**40**	**1½"**	35.0	48.3	63.2	23.2	194.0
	50	**2"**	40.0	60.3	63.2	23.2	224.0
50	**65**	**2½"**	46.0	73.0	78.8	38.8	284.0

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 0: Spigot DIN
Code 30: Spigot – inch, for welding or solvent cementing, depending on the body material

2) **Valve body material**
Code 1: PVC-U, grey
Code 4: ABS
Code 5: PP, reinforced
Code 20: PVDF
Code 71: Inliner PP-H, grey, outliner PP, reinforced
Code 75: Inliner PVDF/outliner PP, reinforced

8.5.2 Spigot IR (code 20)



Connection type spigot IR (code 20) [1], body material inliner/outliner (code 71, 75) [2]

MG	DN	NPS	c	ød	H	H1	L	s	
								Material	
								71	75
20	**15**	**1/2"**	33.0	20.0	36.0	10.0	154.0	1.9	1.9
	20	**3/4"**	33.0	25.0	38.0	12.0	154.0	2.3	1.9
	25	**1"**	33.0	32.0	39.0	13.0	154.0	2.9	2.4
25	**32**	**1¼"**	33.0	40.0	41.0	15.0	194.0	3.7	2.4
40	**40**	**1½"**	33.0	50.0	63.2	23.2	194.0	4.6	3.0
	50	**2"**	33.0	63.0	63.2	23.2	224.0	5.8	3.0

Connection type spigot IR (code 20) [1], body material PVDF (code 20) [2]

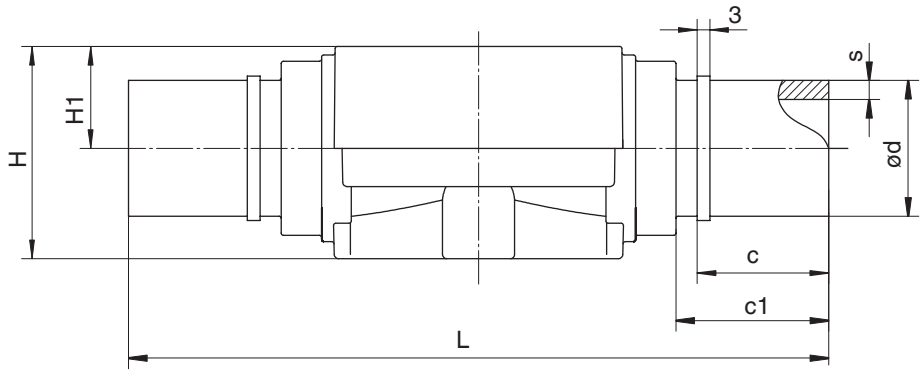
MG	DN	NPS	c	ød	H	H1	L	s
50	**65**	**2½"**	43.0	75.0	78.8	38.8	284.0	3.6

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 20: Spigot for IR butt welding

2) **Valve body material**
Code 20: PVDF
Code 71: Inliner PP-H, grey, outliner PP, reinforced
Code 75: Inliner PVDF/outliner PP, reinforced

8.5.3 Spigot (code 28)



Connection type spigot (code 28) [1], body material PVDF (code 20) [2]

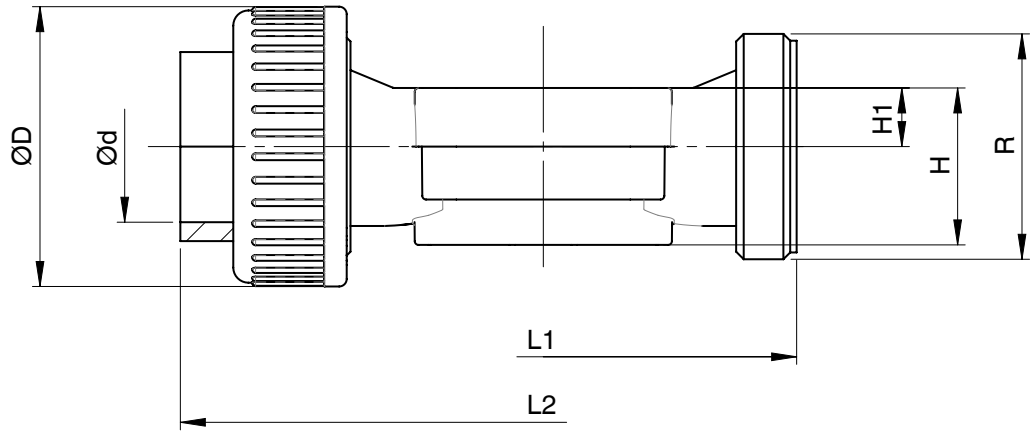
MG	DN	NPS	c	c1	ød	H	H1	L	s
10	**15**	**1/2"**	31.0	37.0	20.0	41.0	16.0	134.0	1.9

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 28: Spigot for IR butt welding, BCF

2) **Valve body material**
Code 20: PVDF

8.5.4 Union end DIN (code 7)



Connection type union end DIN (code 7) [1], body material PVC-U (code 1), PP (code 5), PVDF (code 20), PP-H (code N5) [2], diaphragm size 10

MG	DN	NPS	ød	øD	H		H1		L1	L2		R
					Material		Material			Material		
					1, 20	5, N5	1, 20	5, N5		1, 20	5, N5	
10	**15**	**1/2"**	20.0	43.0	30.0	41.0	15.0	16.0	90.0	128.0	125.0	G 1

Connection type union end DIN (code 7) [1], body material PVC-U (code 1), ABS (code 4), inliner/outliner (code 71, 75) [2], diaphragm size 20 – 40

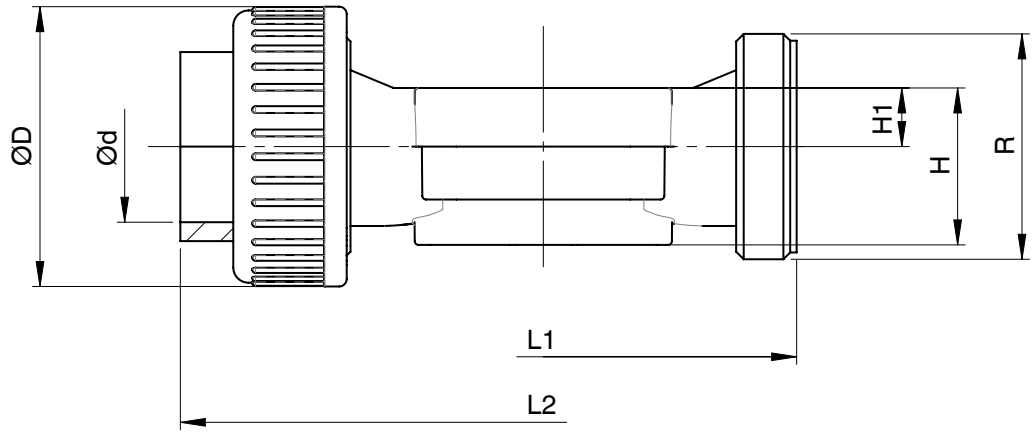
MG	DN	NPS	ød	øD	H	H1	L1	L2				R
								Material				
								1	4	71	75	
20	**15**	**1/2"**	20.0	43.0	36.0	10.0	108.0	146.0	150.0	143.0	146.0	G 1
	20	**3/4"**	25.0	53.0	38.0	12.0	108.0	152.0	156.0	146.0	150.0	G 1¼
	25	**1"**	32.0	60.0	39.0	13.0	116.0	166.0	170.0	158.0	162.0	G 1½
25	**32**	**1¼"**	40.0	74.0	41.0	15.0	134.0	192.0	196.0	181.0	184.0	G 2
40	**40**	**1½"**	50.0	83.0	63.2	23.2	154.0	222.0	222.0	207.0	210.0	G 2¼
	50	**2"**	63.0	103.0	63.2	23.2	184.0	266.0	266.0	245.0	248.0	G 2¾

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 7: Union end with insert (socket) – DIN

2) **Valve body material**
Code 1: PVC-U, grey
Code 4: ABS
Code 5: PP, reinforced
Code 20: PVDF
Code 71: Inliner PP-H, grey, outliner PP, reinforced
Code 75: Inliner PVDF/outliner PP, reinforced
Code N5: PP-H, natural

8.5.5 Union end inch (code 33, 3M, 3T)



Connection type union end inch (code 33) [1], body material PVC-U (code 1) [2], diaphragm size 10

MG	DN	NPS	ød	øD	H	H1	L1	L2	R
10	**15**	**1/2"**	21.4	43.0	30.0	15.0	90.0	128.0	G1

Connection type union end inch (code 33, 3M, 3T) [1], body material PVC-U (code 1) [2], diaphragm sizes 20 - 40

MG	DN	NPS	ød			øD		H	H1	L1	L2			R	
			Connection type								Connection type				
			33	3M	3T	33, 3M	3T				33	3M	3T	33, 3M	3T
20	**15**	**1/2"**	21.4	21.4	22.0	43.0	53.0 *	36.0	10.0	108.0	146.0	158.0	152.0	G 1	G 1¼ *
	20	**3/4"**	26.8	26.7	26.0	53.0	53.0	38.0	12.0	108.0	152.0	164.0	152.0	G 1¼	G 1¼
	25	**1"**	33.6	33.5	32.0	60.0	60.0	39.0	13.0	116.0	166.0	180.0	166.0	G 1½	G 1½
25	**32**	**1¼"**	42.3	42.2	38.0	74.0	74.0	41.0	15.0	134.0	192.0	204.0	192.0	G 2	G 2
40	**40**	**1½"**	48.3	48.3	48.0	83.0	83.0	63.2	23.2	154.0	222.0	230.0	222.0	G 2¼	G 2¼
	50	**2"**	60.4	60.4	60.0	103.0	103.0	63.2	23.2	184.0	264.0	266.0	266.0	G 2¾	G 2¾

Connection type BS (code 33) [1], body material ABS (code 4) [2]

MG	DN	NPS	ød	øD	H	H1	L1	L2	R
20	**15**	**1/2"**	21.4	43.0	36.0	10.0	108.0	150.0	G 1
	20	**3/4"**	26.8	53.0	38.0	12.0	108.0	156.0	G 1¼
	25	**1"**	33.6	60.0	39.0	13.0	116.0	170.0	G 1½
25	**32**	**1¼"**	42.3	74.0	41.0	15.0	134.0	198.0	G 2
40	**40**	**1½"**	48.3	83.0	63.2	23.2	154.0	220.0	G 2¼
	50	**2"**	60.4	103.0	63.2	23.2	184.0	264.0	G 2¾

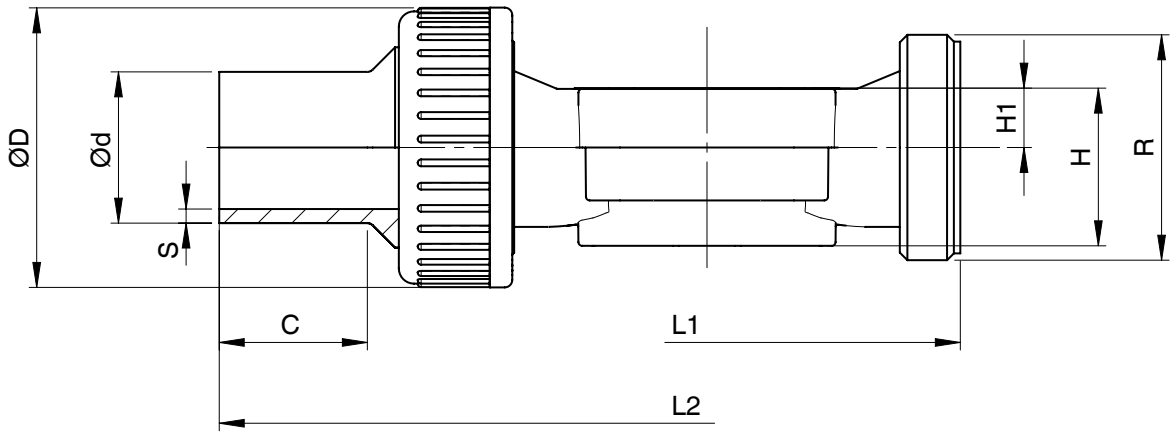
Dimensions in mm
MG = diaphragm size

* Insert requires valve body DN 20

1) **Connection type**
Code 33: Union end with inch insert – BS (socket)
Code 3M: Union end with inch insert – ASTM (socket)
Code 3T: Union end with insert – JIS (socket)

2) **Valve body material**
Code 1: PVC-U, grey
Code 4: ABS

8.5.6 Union end DIN, IR butt welding (code 78)



Connection type union end DIN, IR butt welding (code 78) [1], body materials PP (code 5), PVDF (code 20), PP-H (code N5) [2]

MG	DN	NPS	c	ød	øD	H		H1		L1	L2	R	s
						Material		Material					
						5	20, N5	5	20, N5				
10	**15**	**1/2"**	36.0	20.0	42.0	30.0	41.0	15.0	16.0	90.0	196.0	G 1	1.9

Connection type union end DIN, IR butt welding (code 78) [1], body material inliner/outliner (code 71, 75) [2]

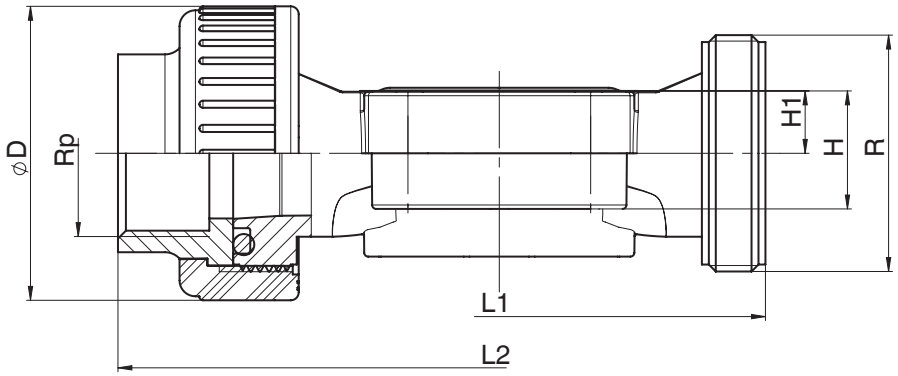
MG	DN	NPS	c	ød	øD	H	H1	L1	L2	R	s	
											Material	
											71	75
20	**15**	**1/2"**	36.0	20.0	43.0	36.0	10.0	108.0	214.0	G 1	1.9	1.9
	20	**3/4"**	37.0	25.0	53.0	38.0	12.0	108.0	220.0	G 1¼	2.3	1.9
	25	**1"**	39.0	32.0	60.0	39.0	13.0	116.0	234.0	G 1½	2.9	2.4
25	**32**	**1¼"**	39.0	40.0	74.0	41.0	15.0	134.0	258.0	G 2	3.7	2.4
40	**40**	**1½"**	43.0	50.0	83.0	63.2	23.2	154.0	284.0	G 2¼	4.6	3.0
	50	**2"**	43.0	63.0	103.0	63.2	23.2	184.0	320.0	G 2¾	5.8	3.0

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 78: Union end with insert (for IR butt welding) – DIN

2) **Valve body material**
Code 5: PP, reinforced
Code 20: PVDF
Code 71: Inliner PP-H, grey, outliner PP, reinforced
Code 75: Inliner PVDF/outliner PP, reinforced
Code N5: PP-H, natural

8.5.7 Union end Rp (code 7R)



Connection type union end Rp (code 7R) [1], body material PVC-U (code 1) [2]

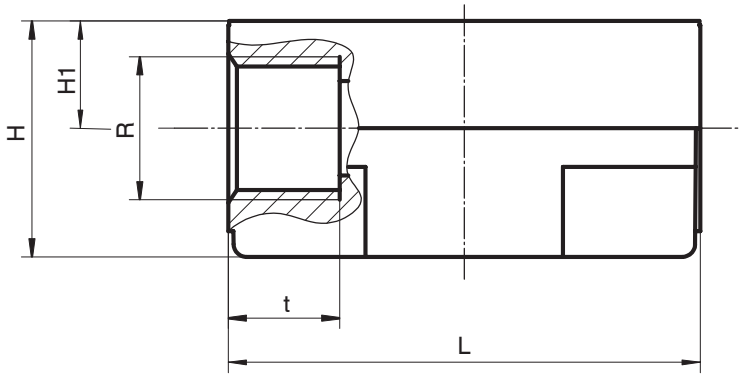
MG	DN	NPS	øD	H	H1	L1	L2	R	Rp
20	**15**	**1/2"**	43.0	36.0	10.0	108.0	146.0	G 1	1/2
	20	**3/4"**	53.0	38.0	12.0	108.0	152.0	G 1¼	3/4
	25	**1"**	60.0	39.0	13.0	116.0	166.0	G 1½	1
25	**32**	**1¼"**	74.0	41.0	15.0	134.0	192.0	G 2	1¼
40	**40**	**1½"**	83.0	63.2	23.2	154.0	222.0	G 2¼	1½
	50	**2"**	103.0	63.2	23.2	184.0	266.0	G 2¾	2

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 7R: Union end with insert (Rp threaded socket) – DIN

2) **Valve body material**
Code 1: PVC-U, grey

8.5.8 Threaded socket (code 1)



Connection type threaded socket (code 1) [1], body materials PVC-U (code 1), PP (code 5), PVDF (code 20) [2]

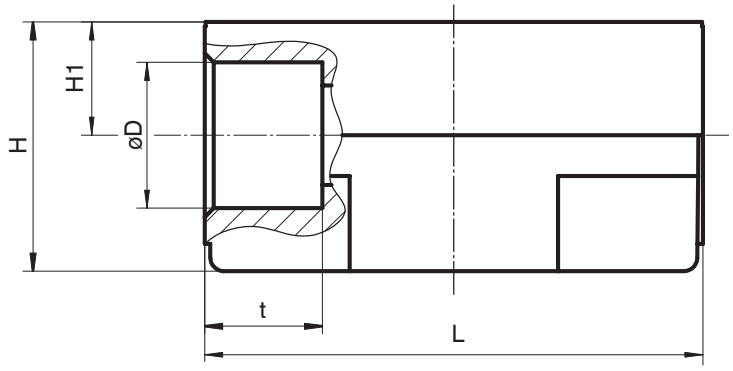
MG	DN	NPS	H		H1	L	R	t
			Material					
			1, 5	20				
10	**12**	**3/8"**	27.5	31.5	12.5	55.0	G3/8	13.0

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 1: Threaded socket DIN ISO 228

2) **Valve body material**
Code 1: PVC-U, grey
Code 5: PP, reinforced
Code 20: PVDF

8.5.9 Solvent cement socket (code 2)



Connection type solvent cement socket (code 2) [1], body material PVC-U (code 1) [2]

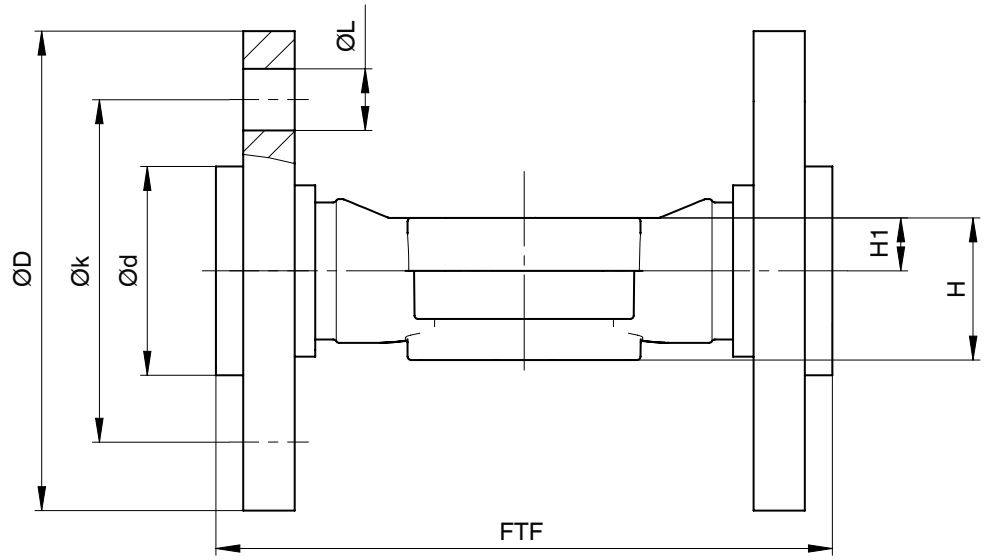
MG	DN	NPS	ø D	H	H1	L	t
10	**12**	**3/8"**	16.0	27.5	12.5	55.0	13.0

Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 2: Solvent cement socket DIN

2) **Valve body material**
Code 1: PVC-U, grey

8.5.10 Flange EN (code 4)



Connection type flange EN (code 4) [1], body material PVC-U (code 1) [2]

MG	DN	NPS	ød	øD	FTF	H	H1	øk	øL	n
20	**15**	**1/2"**	34.0	95.0	130.0	36.0	10.0	65.0	14.0	4
	20	**3/4"**	41.0	105.0	150.0	38.0	12.0	75.0	14.0	4
	25	**1"**	50.0	115.0	160.0	39.0	13.0	85.0	14.0	4
25	**32**	**1¼"**	61.0	140.0	180.0	41.0	15.0	100.0	18.0	4
40	**40**	**1½"**	73.0	150.0	200.0	63.2	23.2	110.0	18.0	4
	50	**2"**	90.0	165.0	230.0	63.2	23.2	125.0	18.0	4
50	**65**	**2½"**	106.0	185.0	290.0	78.8	38.8	145.0	18.0	4

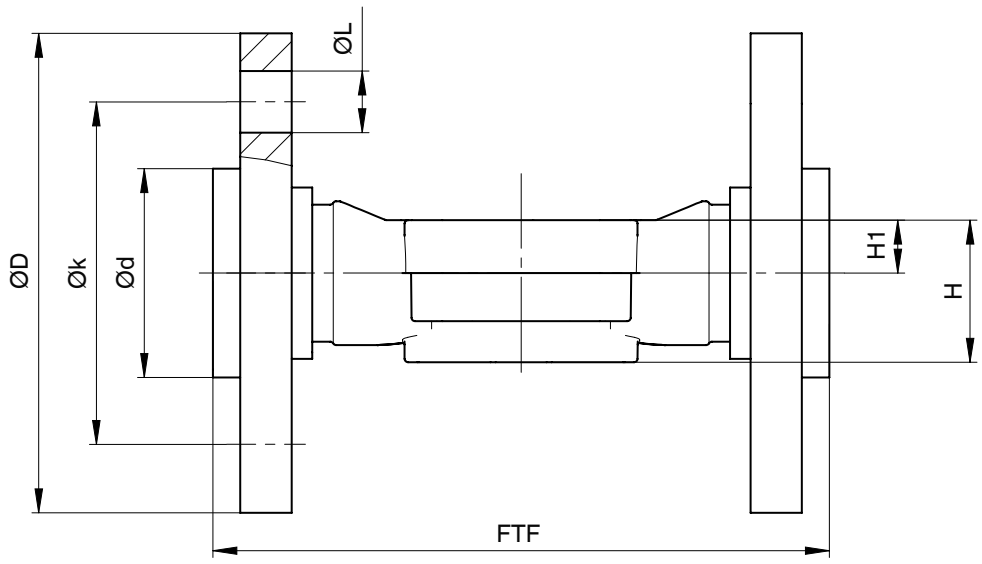
Connection type flange EN (code 4) [1], body materials PP (code 5), PVDF (code 20) [2]

MG	DN	NPS	ød		øD	FTF	H	H1	øk	øL	n
			Material								
			5	20							
50	**65**	**2½"**	122.0	120.0	185.0	290.0	78.8	38.8	145.0	18.0	4

Dimensions in mm
MG = diaphragm size
n = number of bolts

1) **Connection type**
Code 4: Flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1

2) **Valve body material**
Code 1: PVC-U, grey
Code 5: PP, reinforced
Code 20: PVDF



Connection type flange EN (code 4) [1], body material inliner/outliner (code 71, 75) [2]

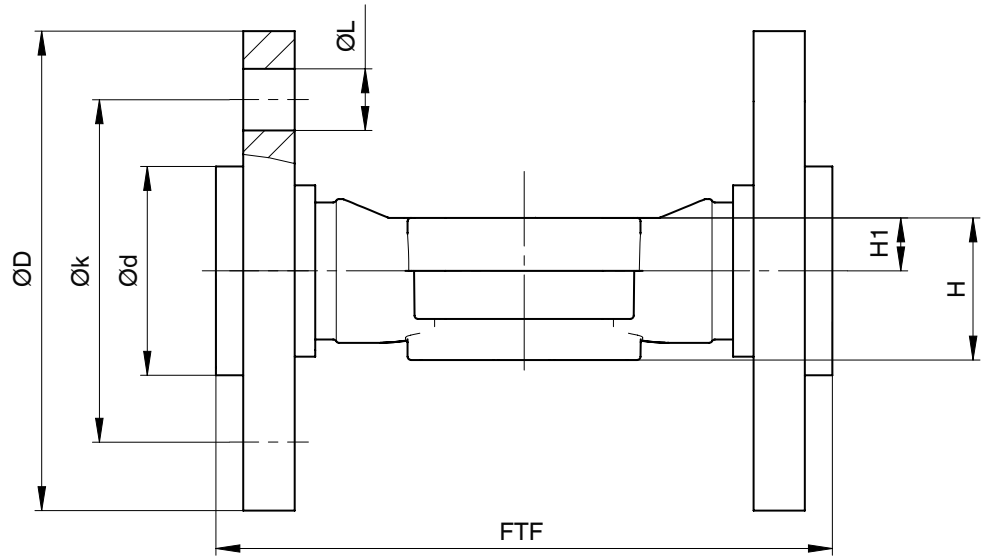
MG	DN	NPS	ød	øD	FTF	H	H1	øk	øL	n
20	**15**	**1/2"**	45.0	95.0	130.0	36.0	10.0	65.0	14.0	4
	20	**3/4"**	58.0	105.0	150.0	38.0	12.0	75.0	14.0	4
	25	**1"**	68.0	115.0	160.0	39.0	13.0	85.0	14.0	4
25	**32**	**1¼"**	78.0	140.0	180.0	41.0	15.0	100.0	18.0	4
40	**40**	**1½"**	88.0	150.0	200.0	63.2	23.2	110.0	18.0	4
	50	**2"**	102.0	165.0	230.0	63.2	23.2	125.0	18.0	4

Dimensions in mm
MG = diaphragm size
n = number of bolts

1) **Connection type**
Code 4: Flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1

2) **Valve body material**
Code 71: Inliner PP-H, grey, outliner PP, reinforced
Code 75: Inliner PVDF/outliner PP, reinforced

8.5.11 Flange ANSI (code 39)



Connection type flange ANSI (code 39) [1], body material PVC-U (code 1) [2]

MG	DN	NPS	ød	øD	FTF	H	H1	øk	øL	n
20	**15**	**1/2"**	34.0	95.0	130.0	36.0	10.0	60.0	16.0	4
	20	**3/4"**	41.0	105.0	150.0	38.0	12.0	70.0	16.0	4
	25	**1"**	50.0	115.0	160.0	39.0	13.0	79.0	16.0	4
25	**32**	**1¼"**	61.0	140.0	180.0	41.0	15.0	89.0	16.0	4
40	**40**	**1½"**	73.0	150.0	200.0	63.2	23.2	98.0	16.0	4
	50	**2"**	90.0	165.0	230.0	63.2	23.2	121.0	19.0	4
50	**65**	**2½"**	106.0	185.0	290.0	78.8	38.8	140.0	19.0	4

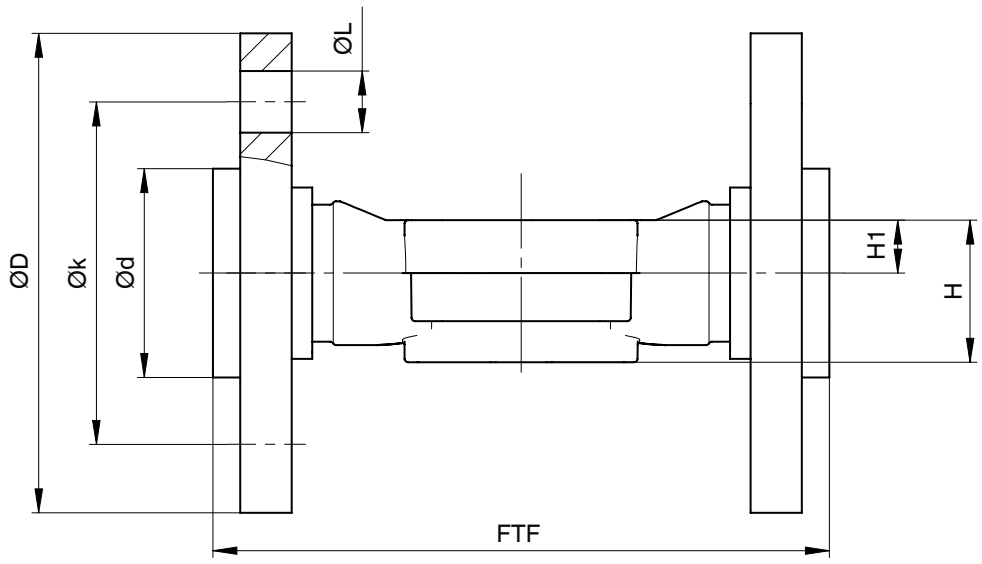
Connection type flange ANSI (code 39) [1], body material PP (code 5), PVDF (code 20) [2]

MG	DN	NPS	ød		øD	FTF	H	H1	øk	øL	n
			Material								
			5	20							
50	**65**	**2½"**	122.0	120.0	185.0	290.0	78.8	38.8	140.0	19.0	4

Dimensions in mm
MG = diaphragm size
n = number of bolts

1) **Connection type**
Code 39: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) **Valve body material**
Code 1: PVC-U, grey
Code 5: PP, reinforced
Code 20: PVDF



Connection type flange ANSI (code 39) [1], inliner/outliner body material (code 71, 75) [2]

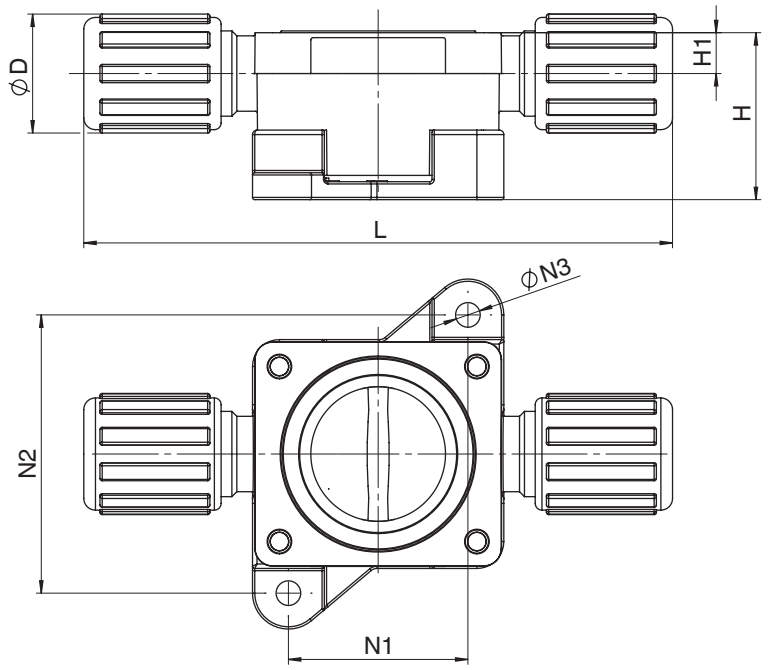
MG	DN	NPS	ød	øD	FTF	H	H1	øk	øL	n
20	**15**	**1/2"**	45.0	95.0	130.0	36.0	10.0	60.0	16.0	4
	20	**3/4"**	54.0	105.0	150.0	38.0	12.0	70.0	16.0	4
	25	**1"**	63.0	115.0	160.0	39.0	13.0	79.0	16.0	4
25	**32**	**1¼"**	73.0	140.0	180.0	41.0	15.0	89.0	16.0	4
40	**40**	**1½"**	82.0	150.0	200.0	63.2	23.2	98.0	16.0	4
	50	**2"**	102.0	165.0	230.0	63.2	23.2	121.0	19.0	4

Dimensions in mm
MG = diaphragm size
n = number of bolts

1) **Connection type**
Code 39: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) **Valve body material**
Code 71: Inliner PP-H, grey, outliner PP, reinforced
Code 75: Inliner PVDF/outliner PP, reinforced

8.5.12 Flare (code 75)



Connection type flare (code 75) [1], body material PP-H (code N5) [2]

MG	DN	NPS	øD	H	H1	L	N1	N2	øN3
10	**15**	**1/2"**	26.5	38.1	10.0	132.0	40.0	62.0	5.5
	20	**3/4"**	26.5	44.5	15.0	134.0	40.0	62.0	5.5

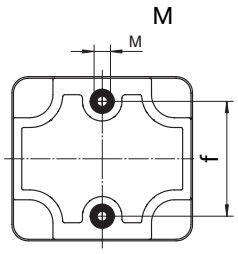
Dimensions in mm
MG = diaphragm size

1) **Connection type**
Code 75: Flare connection with PVDF union nut

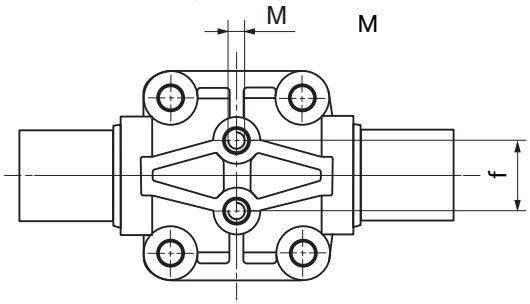
2) **Valve body material**
Code N5: PP-H, natural

8.6 Valve body mounting

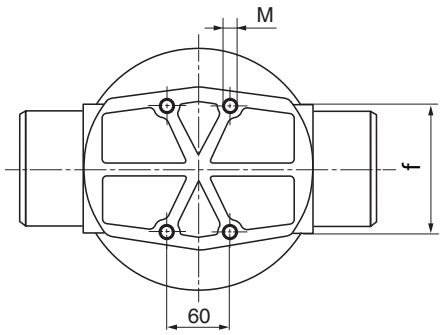
MG 10



MG 20, MG 25, MG 40



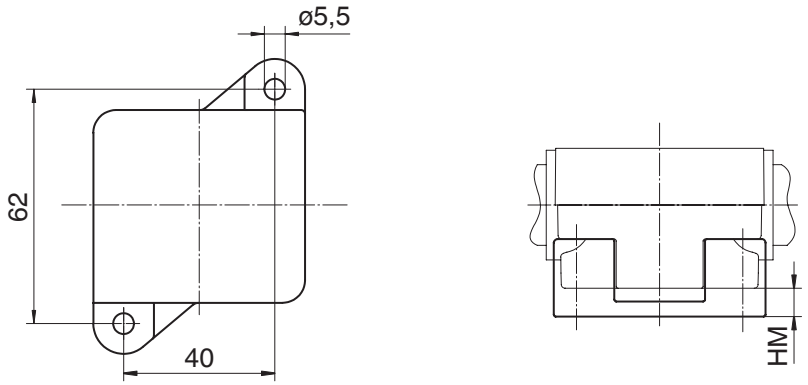
MG 50



MG	DN	M	f
10	**10 - 20**	M5	35.0
20	**15 - 25**	M6	25.0
25	**32**	M6	25.0
40	**40, 50**	M8	44.5
50	**65**	M8	44.5

Dimensions in mm
MG = diaphragm size

8.7 Mounting plate



MG	DN	HM
10	**12**	5.0
	15	4.5
	20	4.5

Dimensions in mm
MG = diaphragm size

9 Manufacturer's information

9.1 Delivery

- Check that all parts are present and check for any damage immediately upon receipt.

The product's performance is tested at the factory. The scope of delivery is apparent from the dispatch documents and the design from the order number.

9.2 Packaging

The product is packaged in a cardboard box which can be recycled as paper.

9.3 Transport

1. Only transport the product by suitable means. Do not drop. Handle carefully.
2. After the installation dispose of transport packaging material according to relevant local or national disposal regulations / environmental protection laws.

9.4 Storage

1. Store the product free from dust and moisture in its original packaging.
2. Avoid UV rays and direct sunlight.
3. Do not exceed the maximum storage temperature (see chapter "Technical data").
4. Do not store solvents, chemicals, acids, fuels or similar fluids in the same room as GEMÜ products and their spare parts.

10 Installation in piping

10.1 Preparing for installation

⚠ WARNING

The equipment is subject to pressure!

► Risk of severe injury or death
- Depressurize the plant.
- Completely drain the plant.

⚠ WARNING

Corrosive chemicals!

► Risk of caustic burns
- Wear appropriate protective gear.
- Completely drain the plant.

⚠ CAUTION

Hot plant components!

► Risk of burns
- Only work on plant that has cooled down.

⚠ CAUTION

Exceeding the maximum permissible pressure!

► Damage to the product
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

⚠ CAUTION

Use as step!

► Damage to the product
► Risk of slipping-off
- Choose the installation location so that the product cannot be used as a foothold.
- Do not use the product as a step or a foothold.

NOTICE

Suitability of the product!

► The product must be appropriate for the piping system operating conditions (medium, medium concentration, temperature and pressure) and the prevailing ambient conditions.

NOTICE

Tools!

► The tools required for installation and assembly are not included in the scope of delivery.

● Use appropriate, functional and safe tools.

1. Ensure the product is suitable for the relevant application.
2. Check the technical data of the product and the materials.
3. Keep appropriate tools ready.
4. Wear appropriate protective gear as specified in the plant operator's guidelines.
5. Comply with appropriate regulations for the connections.
6. Installation work must be performed by trained personnel.
7. Shut off the plant or plant component.
8. Secure the plant or plant component against recommissioning.
9. Depressurize the plant or plant component.
10. Completely drain the plant or plant component and allow it to cool down until the temperature is below the media vaporization temperature and cannot cause scalding.
11. Correctly decontaminate, rinse and ventilate the plant or plant component.
12. Lay piping so that the product is protected against transverse and bending forces, and also vibrations and tension.
13. Only install the product between matching aligned pipes (see chapters below).
14. Pay attention to the installation position (see "Installation position" chapter).

10.2 Installation position

The installation position of the product is optional.

10.3 Installation with butt weld spigots

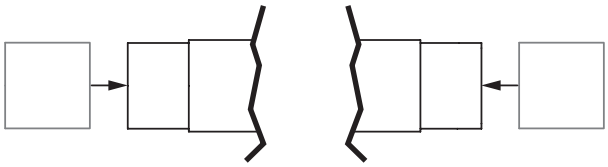


Fig. 1: Butt weld spigots

1. Carry out preparations for installation (see chapter "Preparing for installation").
2. Adhere to good welding practices!
3. Disassemble the actuator with the diaphragm before welding in the valve body (see "Removing the actuator" chapter).
4. Weld the body of the product in the piping.
5. Allow butt weld spigots to cool down.
6. Reassemble the valve body and the actuator with diaphragm (see "Mounting the actuator" chapter).
7. Re-attach or reactivate all safety and protective devices.
8. Flush the system.

10.4 Installation with threaded sockets

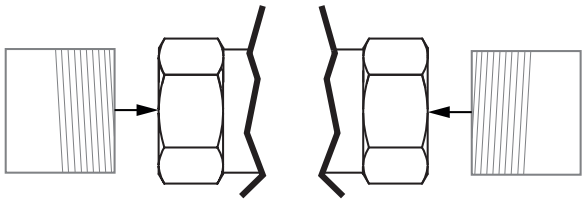


Fig. 2: Threaded socket

NOTICE

Sealing material

► The sealing material is not included in the scope of delivery.

● Only use appropriate sealing material.

1. Keep thread sealant ready.
2. Carry out preparations for installation (see chapter "Preparing for installation").
3. Screw the threaded connections into the pipe in accordance with valid standards.
4. Screw the body of the product onto the piping using appropriate thread sealant.
5. Re-attach or reactivate all safety and protective devices.

10.5 Installation with threaded spigots

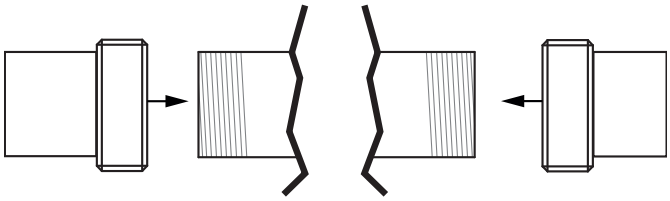


Fig. 3: Threaded spigots

NOTICE

Thread sealant

► The thread sealant is not included in the scope of delivery.

● Only use appropriate thread sealant.

1. Keep thread sealant ready.
2. Carry out preparations for installation (see chapter "Preparing for installation").
3. Screw the pipe into the threaded connection of the valve body in accordance with valid standards.

   ⇨ Use appropriate thread sealant.
4. Re-attach or reactivate all safety and protective devices.

10.6 Installation with union ends

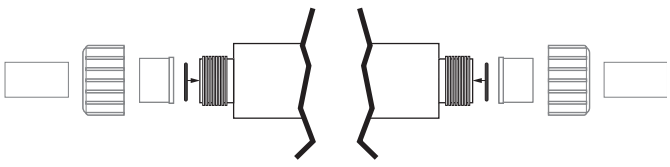


Fig. 4: Union end with insert

NOTICE

► The solvent cement is not included in the scope of delivery.
● Only use suitable solvent cement!

1. Carry out preparations for installation (see chapter "Preparations for installation").
2. Depending on the application, comply with the welding standards and the specifications of the solvent cement manufacturer for adhesive bonds.
3. Screw the threaded connections into the piping in accordance with valid standards.
4. Unscrew the union nut from the body of the product.
5. Reinsert the O-ring if necessary.
6. Push the union nut over the piping.
7. Connect the insert with the piping by solvent cementing/welding.
8. Screw the union nut back onto the body of the product.
9. Connect the other side of the body of the product with the piping in the same way.
10. Reactivate all safety and protective devices.

10.7 Installation with solvent cement sockets

NOTICE

► The solvent cement is not included in the scope of delivery.
● Only use suitable solvent cement!

1. Carry out preparations for installation (see chapter "Preparations for installation").
2. Apply solvent cement on the inside of the valve body and on the outside of the piping as specified by the solvent cement manufacturer.
3. Connect the body of the product with the piping.
4. Reactivate all safety and protective devices.

10.8 Installation with flare connection

NOTICE

Fittings!

► For preparation and connection of the flare connections, please refer to the GEMÜ FlareStar® brochure and the GEMÜ flare and assembly instructions.
● Depending on the ambient conditions, use resistant and suitable connection fittings.

1. Carry out preparations for installation (see chapter "Preparations for installation").
2. Push the flared PFA tubing onto the flare fitting body.
3. Screw the union nut over it.
4. Re-attach or reactivate all safety and protective devices.

10.9 Installation with flanged connection

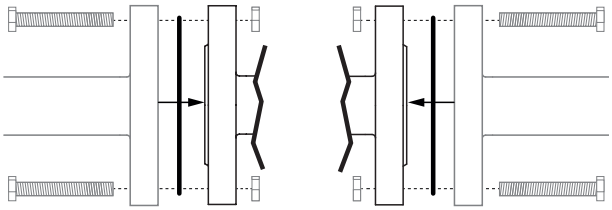


Fig. 5: Flanged connection

NOTICE

Sealing material

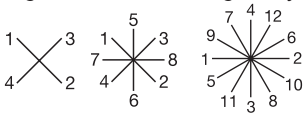
► The sealing material is not included in the scope of delivery.
● Only use appropriate sealing material.

NOTICE

Connector elements

► The connector elements are not included in the scope of delivery.
● Only use connector elements made of approved materials.
● Observe permissible tightening torque of the bolts.

1. Keep sealing material ready.
2. Carry out preparations for installation (see chapter "Preparing for installation").
3. Ensure clean, undamaged sealing surfaces on the connection flanges.
4. Align flanges carefully before installing them.
5. Clamp the product centrally between the piping with flanges.
6. Centre the gaskets.
7. Connect the valve flange and the piping flange using appropriate sealing materials and matching bolting.
8. Use all flange holes.
9. Tighten the bolts diagonally.



10. Re-attach or reactivate all safety and protective devices.

11 Operation

11.1 Manual override

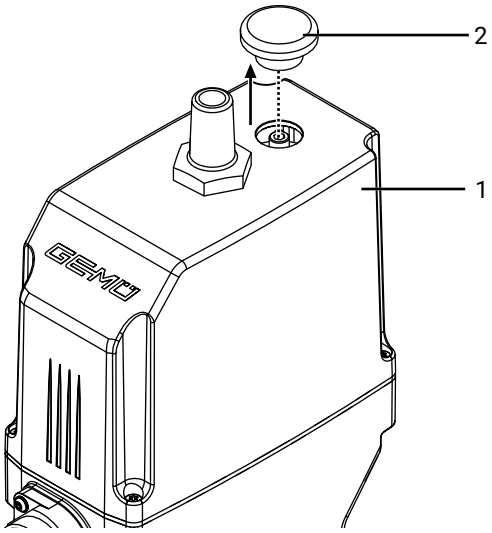
⚠ WARNING

Damage to the product!

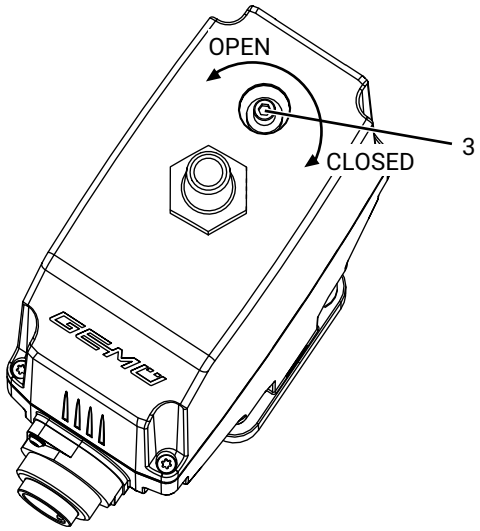
► Risk of damage to the product
► Manufacturer liability and guarantee will be void.
● Only operate the manual override **by hand**, because there is no mechanical stop.

NOTICE

► Manual override may only be used in extreme emergencies as there is a risk of damaging the valve drive.
Use of the manual override voids the manufacturer's liability.



1. Remove the sealing plug **2** from the actuator cover **1** using an appropriate tool.



2. Operate the manual override **3** with the hexagon socket (WAF3).
   ⇨ Turn clockwise to close the valve.
   ⇨ Turn anticlockwise to open the valve.
3. After actuation, the plug must be reinserted, otherwise the IP protection is no longer guaranteed and the actuator may be damaged.

12 Inspection and maintenance

⚠ WARNING

The equipment is subject to pressure!
► Risk of severe injury or death
● Depressurize the plant.
● Completely drain the plant.

⚠ CAUTION

Use of incorrect spare parts!
► Damage to the GEMÜ product
► Manufacturer liability and guarantee will be void
● Use only genuine parts from GEMÜ.

⚠ CAUTION

Hot plant components!
► Risk of burns
● Only work on plant that has cooled down.

NOTICE

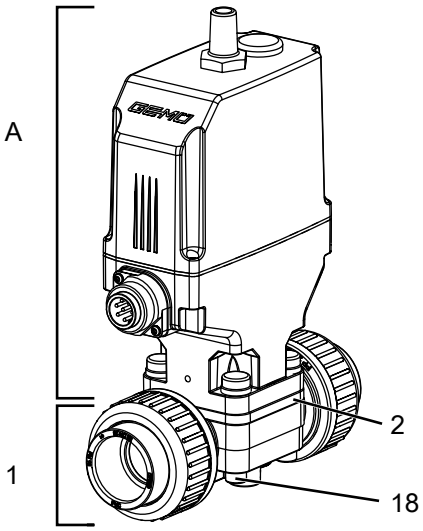
Exceptional maintenance work!
► Damage to the GEMÜ product
● Any maintenance work and repairs not described in these operating instructions must not be performed without consulting the manufacturer first.

The operator must carry out regular visual examination of the GEMÜ products dependent on the operating conditions and the potential danger in order to prevent leakage and damage.

The product also must be disassembled and checked for wear in the corresponding intervals.

1. Have servicing and maintenance work performed by trained personnel.
2. Wear appropriate protective gear as specified in plant operator's guidelines.
3. Shut off plant or plant component.
4. Secure the plant or plant component against recommissioning.
5. Depressurize the plant or plant component.
6. Actuate GEMÜ products which are always in the same position four times a year.
7. If necessary, the end position counter **User** can be reset after maintenance or other changes under parameter Cycle Counter.

12.1 Spare parts



Item	Name	Order description
A	Actuator	9629...
1	Valve body	K600...
2	Diaphragm	600...M...
18	Screw	629...S30...

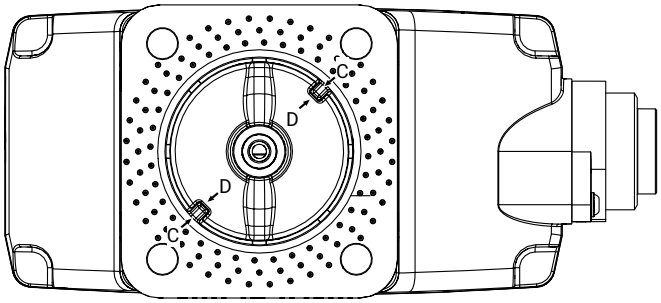
12.2 Removing the actuator

1. Move the actuator **A** to the open position.
2. Loosen the fastening elements between actuator **A** and valve body **1** diagonally and remove them.
3. Lift actuator **A** off valve body **1**.
4. Move the actuator **A** to the closed position.
5. Clean all parts of contamination (do not damage parts during cleaning).
6. Check parts for potential damage, replace if necessary (only use genuine parts from GEMÜ).

12.3 Removing the diaphragm

1. Remove actuator **A** (see chapter "Removing the actuator").
2. Unscrew the diaphragm.
   ⇨ Please note: Depending on the version, the compressor may fall out.
3. Clean all parts of contamination (do not damage parts during cleaning).
4. Check parts for potential damage, replace if necessary (only use genuine parts from GEMÜ).

12.4 Mounting the compressor



1. Place the compressor loosely on the actuator spindle.
2. Fit recesses **D** into guides **C**.

⇨ The compressor must be able to be moved freely between the guides.

12.5 Mounting the diaphragm

12.5.1 Mounting the convex diaphragm

NOTICE

► Fit the diaphragms suitable for the product (suitable for medium, medium concentration, temperature and pressure). The diaphragm is a wearing part. Check the technical condition and function of the product before commissioning and during the whole term of use. Carry out checks regularly and determine the check intervals in accordance with the conditions of use and/or the regulatory codes and provisions applicable for this application.

NOTICE

► If the diaphragm is not screwed into the adapter far enough, the closing force is transmitted directly onto the diaphragm pin and not via the compressor. This will cause damage and early failure of the diaphragm and leakage of the product. If the diaphragm is screwed in too far, perfect sealing at the valve seat will not be achieved. The function of the product is no longer ensured.

NOTICE

► Incorrectly mounted diaphragms cause the product leakage and emission of medium. In this case, remove the diaphragms, check the complete valve and diaphragms and reassemble again proceeding as described above.

NOTICE

► The compressor is loose and can fall out.

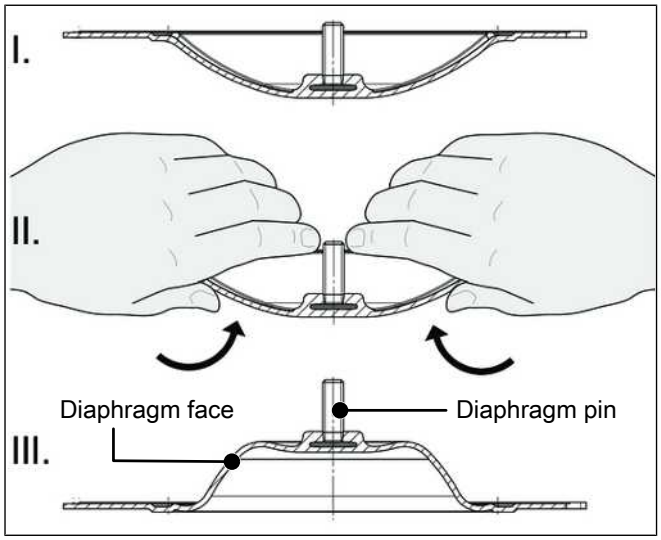


Fig. 6: Inverting the diaphragm face

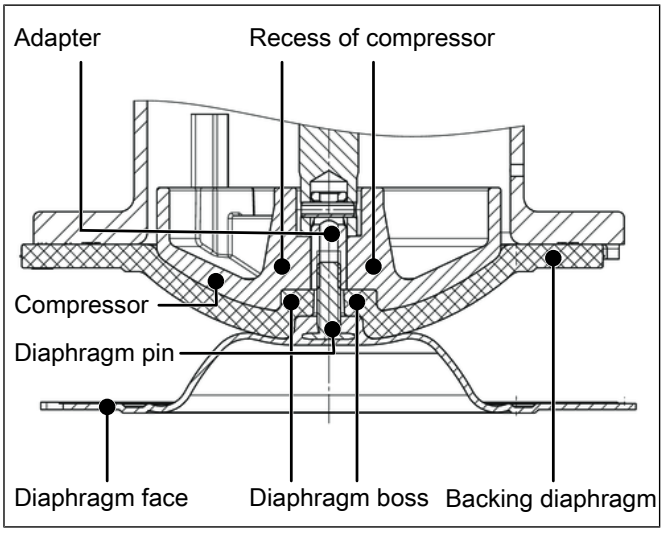
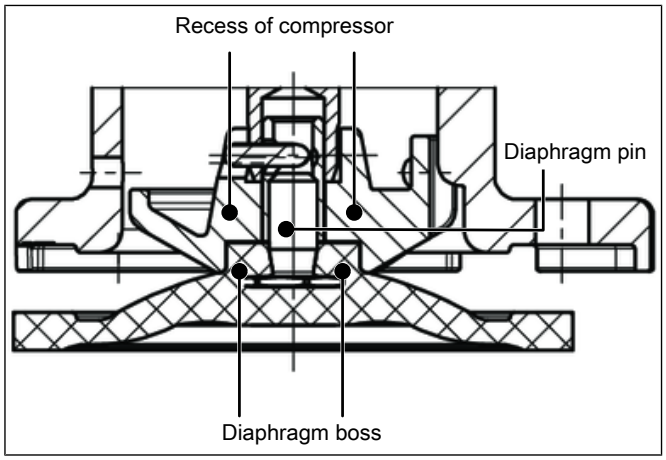


Fig. 7: Screwing in the diaphragm face

1. Move the actuator **A** to the closed position.
2. Mount the compressor (see "Mounting the compressor").
3. Check if the compressor is fitted in the guides.
4. Invert the new diaphragm face manually (use a clean, padded mat with larger nominal sizes).
5. Position the new backing diaphragm onto the compressor.
6. Position the diaphragm face onto the backing diaphragm.
7. Screw diaphragm face tightly into the compressor manually.
   ⇨ The diaphragm boss must fit closely in the recess of the compressor.
8. If it is difficult to screw it in, check the thread and replace damaged parts.
9. When definitive resistance is felt, turn back the diaphragm until its bolt holes are in correct alignment with the bolt holes of the actuator.
10. Press the diaphragm face tightly onto the backing diaphragm manually so that it returns to its original shape and fits closely on the backing diaphragm.
11. Align the weir of compressor and diaphragm in parallel.

12.5.2 Mounting the concave diaphragm



1. Move the actuator **A** to the closed position.
2. Mount the compressor (see "Mounting the compressor").
3. Check if the compressor is fitted in the guides.
4. Manually screw new diaphragm tightly into the compressor.
5. Check if the diaphragm boss fits closely in the recess of the compressor.
6. If it is difficult to screw it in, check the thread and replace damaged parts.
7. When definitive resistance is felt, turn back the diaphragm until its bolt holes are in correct alignment with the bolt holes of the actuator.
8. Align the weir of compressor and diaphragm in parallel.

12.6 Mounting the actuator

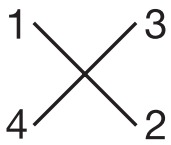
NOTICE

Diaphragms set in the course of time.

► Leakage

- After disassembly/assembly of the product, check that the bolts and nuts on the body are tight and retighten if required.
- Retighten the bolts and nuts at the very latest after the first sterilization process.

1. Move the actuator **A** to the open position.
2. Position actuator **A** with the mounted diaphragm on the valve body **1**.
3. Screw in bolts, washers and nuts hand tight.
   ⇨ Fastening elements may vary depending on the diaphragm size and/or valve body version.
4. Move the actuator **A** to the closed position.
5. Open actuator **A** approx. 20%.
6. Fully tighten the bolts with nuts diagonally.



7. Ensure even compression of the diaphragm (approx. 10 to 15%).
   ⇨ Even compression is detected by an even bulge to the outside.
   Please note: For a code 5M diaphragm (convex diaphragm), the PTFE diaphragm face and the EPDM backing diaphragm must be positioned level with and parallel to the valve body.
8. With the valve fully assembled, check the function and tightness.
9. Carry out initialisation.

13 Troubleshooting

Error	Possible cause	Troubleshooting
The product is leaking downstream (does not close or does not close fully)	Operating pressure too high	Operate the product with operating pressure specified in datasheet
	Foreign matter between shut-off diaphragm and valve body	Remove the actuator, remove foreign matter, check diaphragm and valve body for potential damage, replace damaged parts if necessary
	Valve body leaking or damaged	Check valve body for potential damage, replace valve body if necessary
	Shut off diaphragm faulty	Check shut off diaphragm for potential damage, replace the shut off diaphragm if necessary
The product does not open or does not open fully	Actuator defective	Replace the actuator
	Shut-off diaphragm incorrectly mounted	Remove the actuator, check the diaphragm mounting, replace the shut-off diaphragm if necessary
	Operating pressure too high	Operate the product with operating pressure specified in datasheet
	Foreign matter in the product	Remove and clean the product
	The actuator design is not suitable for the operating conditions	Use an actuator that is designed for the operating conditions
	Voltage is not connected	Connect voltage
	Cable ends incorrectly wired	Wire cable ends correctly
The product does not close or does not close fully	The actuator design is not suitable for the operating conditions	Use an actuator that is designed for the operating conditions
	Foreign matter in the product	Remove and clean the product
	Voltage is not connected	Connect voltage
The product is leaking between actuator and valve body	Shut-off diaphragm incorrectly mounted	Remove the actuator, check the diaphragm mounting, replace the shut-off diaphragm if necessary
	Bolting between valve body and actuator loose	Tighten bolting between valve body and actuator
	Shut off diaphragm faulty	Check shut off diaphragm for potential damage, replace the shut off diaphragm if necessary
	Actuator/valve body damaged	Replace actuator/valve body
The product is leaking between actuator flange and valve body	Mounting parts loose	Retighten mounting parts
	Valve body / actuator damaged	Replace valve body/actuator
Valve body of the GEMÜ product is leaking	Valve body of the GEMÜ product is faulty or corroded	Check valve body of the GEMÜ product for potential damage, replace valve body if necessary
Body of the GEMÜ product is leaking	Incorrect installation	Check installation of valve body in piping
Valve body connection to piping leaking	Incorrect installation	Check installation of valve body in piping

14 Removal from piping

1. Remove in reverse order to installation.
2. Unscrew the electrical wiring.
3. Disassemble the product. Observe warning notes and safety information.

15 Disposal

1. Pay attention to adhered residual material and gas diffusion from penetrated media.
2. Dispose of all parts in accordance with the disposal regulations/environmental protection laws.

16 Returns

Legal regulations for the protection of the environment and personnel require that the completed and signed return delivery note is included with the dispatch documents. Returned goods can be processed only when this note is completed. If no return delivery note is included with the product, GEMÜ cannot process credits or repair work but will dispose of the goods at the operator's expense.

1. Clean the product.
2. Request a return delivery note from GEMÜ.
3. Complete the return delivery note.
4. Send the product with a completed return delivery note to GEMÜ.

17 EU Declaration of Incorporation according to the EC Machinery Directive 2006/42/EC, Annex II B

EU Declaration of Incorporation

according to the EC Machinery Directive 2006/42/EC, Annex II B

We, the company

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Fritz-Müller-Strasse 6–8
74653 Ingelfingen-Criesbach, Germany

hereby declare under our sole responsibility that the below-mentioned product complies with the relevant essential health and safety requirements in accordance with Annex I of the above-mentioned Directive.

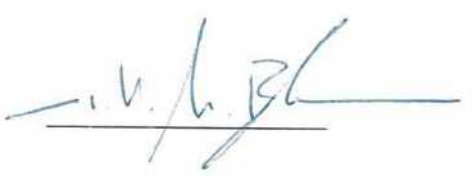
Product:	GEMÜ R629
Product name:	Motorized diaphragm valve
The following essential health and safety requirements of the EC Machinery Directive 2006/42/EC, Annex I have been applied or adhered to:	1.1.2.; 1.1.3.; 1.1.5.; 1.3.2.; 1.3.4.; 1.3.7.; 1.3.8.; 1.5.1.; 1.5.13.; 1.5.2.; 1.5.4.; 1.5.6.; 1.5.7.; 1.5.8.; 1.6.1.; 1.6.3.; 1.6.5.; 1.7.1.; 1.7.1.1.; 1.7.2.; 1.7.3.; 1.7.4.; 1.7.4.1.; 1.7.4.2.; 1.7.4.3.
The following harmonized standards (or parts thereof) have been applied:	EN ISO 12100:2010

We also declare that the specific technical documents have been created in accordance with part B of Annex VII.

The manufacturer undertakes to transmit relevant technical documents on the partly completed machinery to the national authorities in response to a reasoned request. This communication takes place electronically.

This does not affect the industrial property rights.

The partly completed machinery may be commissioned only if it has been determined, if necessary, that the machinery into which the partly completed machinery is to be installed meets the provisions of the Machinery Directive 2006/42/EC.



M. Barghoorn
Head of Global Technics

Ingelfingen, 25/09/2023

18 EU Declaration of Conformity in accordance with 2014/68/EU (Pressure Equipment Directive)

EU Declaration of Conformity

in accordance with 2014/68/EU (Pressure Equipment Directive)

We, the company	GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG Fritz-Müller-Strasse 6–8 74653 Ingelfingen-Criesbach, Germany

hereby declare under our sole responsibility that the below-mentioned product complies with the regulations of the above-mentioned Directive.

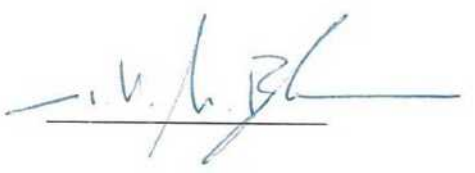
Product:	GEMÜ R629
Product name:	Motorized diaphragm valve
Notified body:	TÜV Rheinland Industrie Service GmbH Am Grauen Stein 1 51105 Cologne, Germany
ID number of the notified body:	0035
No. of the QA certificate:	01 202 926/Q-02 0036
Applied conformity assessment procedure(s):	Module H
The following harmonized standards (or parts thereof) have been applied:	EN ISO 16138:2006/A1:2019

Information for products with a nominal size ≤ DN 25:

The products are developed and produced according to GEMÜ's in-house process instructions and standards of quality which comply with the requirements of ISO 9001 and ISO 14001. According to Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU, these products must not be identified by a CE-marking.

Other applied technical standards / Remarks:

- AD 2000



M. Barghoorn
Head of Global Technics

Ingelfingen, 25/09/2023

19 EU Declaration of Conformity in accordance with 2014/30/EU (EMC Directive)

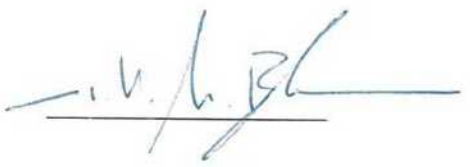
EU Declaration of Conformity

in accordance with 2014/30/EU (EMC Directive)

We, the company	GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG Fritz-Müller-Strasse 6–8 74653 Ingelfingen-Criesbach, Germany

hereby declare under our sole responsibility that the below-mentioned product complies with the regulations of the above-mentioned Directive.

Product:	GEMÜ R629
Product name:	Motorized diaphragm valve
The following harmonized standards (or parts thereof) have been applied:	EN 61000-6-4:2007/A1:2011; EN 61000-6-2:2005/AC:2005



M. Barghoorn
Head of Global Technics

Ingelfingen, 25/09/2023

20 EU Declaration of Conformity in accordance with 2011/65/EU (RoHS Directive)

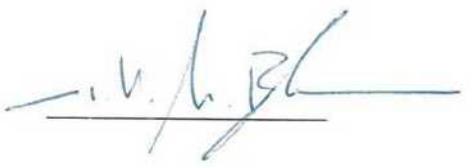
EU Declaration of Conformity

in accordance with 2011/65/EU (RoHS Directive)

We, the company	GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG Fritz-Müller-Strasse 6–8 74653 Ingelfingen-Criesbach, Germany

hereby declare under our sole responsibility that the below-mentioned product complies with the regulations of the above-mentioned Directive.

Product:	GEMÜ R629
Product name:	Motorized diaphragm valve
The following harmonized standards (or parts thereof) have been applied:	EN IEC 63000:2018



M. Barghoorn
Head of Global Technics

Ingelfingen, 25/09/2023

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